Kelly Zhu

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Education

University of Toronto 09/2024 – present
MSc in Computer Science (Supervised by David Lindell & Kyros Kutulakos) *Toronto, ON*

University of Toronto 09/2019 – 04/2024
BASc in Engineering Science, Machine Intelligence (Supervised by Florian Shkurti) *Toronto, ON*
Minor in Robotics & Mechatronics

Publications

- S.K. Tedla, **K. Zhu**, T. Canham, F. Taubner, M. Brown, K. Kutulakos, D. Lindell, "Generating the Past, Present and Future from a Motion-Blurred Image," *ACM Transactions on Graphics (SIGGRAPH Asia)*, 2025.
- Y. Liu, **K. Zhu**, G. Wu, Y. Ren, B. Liu, Y. Liu, J. Shan, "MV-DeepSDF: Implicit Modeling with Multi-Sweep Point Clouds for 3D Vehicle Reconstruction in Autonomous Driving," *IEEE/CVF International Conference on Computer Vision (ICCV)*, 2023.

Research Experience

Undergraduate Thesis 09/2023 – 09/2024
Robot Vision & Learning Lab (Supervised by Florian Shkurti) *University of Toronto*
- Multi-agent trajectory prediction for sidewalk navigation in autonomous robots
- Uncertainty calibration for perception-based motion planning in autonomous driving

DAAD RISE Research Student 06/2023 – 08/2023
safe.trAIn by Siemens AG (Supervised by Alexander Braun) *Hochschule Düsseldorf*
- Investigated the use of AI-based methods for safe and reliable autonomous train systems

Summer Research Student 05/2021 – 09/2021
Space & Terrestrial Autonomous Robotics Systems Lab (Supervised by Jonathan Kelly) *University of Toronto*
- Designed algorithms for energy-efficient stochastic path planning in planetary navigation

Summer Research Student 05/2020 – 08/2020
Robotics & Automation Lab (Supervised by Andrew Goldenberg) *University of Toronto*
- Prototyped an autonomous bed-making robot on a 6-DoF robot arm mounted on a mobile platform

Industry Experience

Perception Researcher 05/2022 – 04/2023
Huawei Noah's Ark Lab (Supervised by Bingbing Liu) *Markham, ON*
- Research on LiDAR-based 3D scene and vehicle reconstruction for autonomous driving

Autonomy Engineering Intern 05/2021 – 09/2021
Trimble Applanix *Richmond Hill, ON*
- Contributed towards a LiDAR-based SLAM and perception solution for autonomous navigation

Awards & Honours

Ontario Graduate Scholarship, $15K 2025
Government of Ontario, *merit-based scholarship for MSc research*

Vector Scholarship in Artificial Intelligence, $17.5K 2024
Vector Institute, *merit-based scholarship for MSc research*

Queen Elizabeth II Graduate Scholarship in Science & Technology, $15K 2024
Government of Ontario, *merit-based scholarship for MSc research*

DAAD RISE Germany Scholar, $6K 2023
German Academic Exchange Service, *scholarship for research abroad in Germany*

Research Training Award, $6K 2020
Mitacs, *funding for summer research internship*

Engineering Science Research Opportunities Program (ESROP), $6K 2020
Division of Engineering Science, *funding for summer research internship*

University of Toronto Scholar, $7.5K 2019
University of Toronto, *undergraduate entrance scholarship*

Dean's Merit Award, $2.5K 2019
Faculty of Applied Science & Engineering, *undergraduate entrance scholarship*

Outreach & Community Service

HER CODE CAMP, *Volunteer TA* 2025
Non-profit organization that provides free coding camps for underrepresented communities in high school

Vector Institute Culture Committee, *Committee Member* 2025
Volunteer-run committee for fostering an inclusive research culture at Vector Institute

NSight Mentorship Program, *Mentor* 2025
Student-run Engineering Science mentorship program for academic and social support

Toronto GAAP, *Mentor* 2024, 2025
Student-run graduate application support for a more equitable admissions process

Teaching

CSC2529 – Computational Imaging Fall 2025
Teaching Assistant *University of Toronto*

CSC384 – Introduction to Artificial Intelligence Summer 2025
Teaching Assistant *University of Toronto*

CSC412 – Probablistic Learning & Reasoning Winter 2025
Teaching Assistant *University of Toronto*

Skills & Languages

Programming Languages: Python, C/C++, MATLAB, Java
Libraries: PyTorch, TensorFlow, NumPy, SciPy, scikit-learn, pandas, Matplotlib, Open3D, OpenCV
Tools: Linux/Unix, ROS, Git, Docker, Kubernetes
Languages: English (native), Mandarin (fluent), French (B2)